

REMARKS

In the last Office Action, the Examiner rejected claims 1, 12, and 17 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,537,976 to Hu; rejected claims 1, 2, 12, 17, 18, 21, 24-26, 28-30, and 40 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,807,929 to Bloms et al. ("Bloms"); rejected claims 1, 12, 17, 29 and 40 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,688,280 to Weber et al. ("Weber"); rejected claims 1-21, 24-26, and 28-44 under 35 U.S.C. § 102(e) as being anticipated by U.S. Publication 2004/0168685 to Sakai et al. ("Sakai"); rejected claims 3-11, 13-16, 19, 20, 31-39, and 41-44 under 35 U.S.C. § 103(a) as being unpatentable over Bloms in view of U.S. Patent No. 5,720,261 to Sturman et al. ("Sturman"); and rejected claims 2-11, 13-16, 18-20, 30-39, and 41-44 under 35 U.S.C. § 103(a) as being unpatentable over Weber in view of U.S. Patent No. 5,720,261 to Sturman et al. ("Sturman").

By this Reply, Applicants have amended claims 1, 4, 6, 7, 12, 14, 21, 25, 26, 29, 32, 35, 37, 38, 40, and 42, and canceled claims 2, 3, 8, 13, 17-20, 22, 23, 27, 30, 31, 34, and 36. Currently, claims 1, 4-7, 9-12, 14-16, 21, 24-26, 28-29, 32-33, 35, and 37-44 are pending in this application.

Applicants thank the Examiner for the courtesies extended during the interview on July 26, 2005. The remarks in this Response are consistent with the issues discussed during the interview.

Rejections Under 35 U.S.C. § 102

Applicants respectfully traverse the rejection of claims 1, 12, and 17 under 35 U.S.C. § 102(b) as being anticipated Hu for at least the reason that Hu fails to disclose

every element of the claimed invention. For example, independent claim 1, as amended, recites, “wherein the separate actuator is a latching solenoid including a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid coil, the separate actuator being configured such that the armature and the core remain at a second position when a first current is removed.”

In another example, independent claim 12, as amended, recites “operating ... an electromagnetic latching solenoid associated with the intake valve...wherein operating includes controllably moving a coupled armature and core of the separate actuator between a first position and a second position by applying a first current to a solenoid coil of the separate actuator, and wherein the coupled armature stays in the second position after the first current is removed.”

Hu discloses a hydraulic system for operating valves. Hu fails to disclose a latching solenoid. At least because Hu fails to disclose each element of the claimed invention, 1 and 12 are allowable over Hu. Claim 17 is cancelled, obviating the rejection of that claim. Accordingly, the rejection of claims 1, 12, and 17 under 35 U.S.C. § 102(b) should be withdrawn.

Applicants respectfully traverse the rejection of claims 1, 2, 12, 17, 18, 21, 24-26, 28-30, and 40 under 35 U.S.C. § 102(e) as being anticipated by Bloms for at least the reason that Bloms does not specifically discuss every element of the claimed invention.

As mentioned above, claims 1 and 12 recite a “latching solenoid.” Similarly, each of independent claims 21, 26, 29 and 40 recites a “latching solenoid.” Independent claims 1, 12, 21, 26 and 29 are allowable at least for the reason that Bloms fails to

specifically discuss a “latching solenoid.” Claims 24, 25, and 28 each depend from an allowable independent claim, and are thus allowable at least due to their dependence from an allowable claim. Claims 2, 17, 18, 28 and 30 are cancelled, obviating the rejection of those claims. Accordingly, the rejection of claims 1, 2, 12, 17, 18, 21, 24-26, 28-30, and 40 under 35 U.S.C. § 102(e) should be withdrawn.

Applicants respectfully traverse the rejection of claims 1, 12, 17, 29 and 40 under 35 U.S.C. § 102(e) as being anticipated by Weber for at least the reason that Weber does not specifically discuss every element of the claimed invention.

As discussed above, claims 1, 12, 17, 29, and 40 recite a “latching solenoid.” Similarly, each of independent claims 21 and 26, 29 and 40 recites a “latching solenoid.” Independent claim 1, 12, 29, and 40 are allowable at least for the reason that Weber fails to specifically discuss a “latching solenoid.” Claim 17 is cancelled, obviating the rejection of that claim. Accordingly, the rejection of claims 1, 12, 17, 29, and 40 under 35 U.S.C. § 102(e) should be withdrawn.

Applicants respectfully traverse the rejection of claims 1-21, 24-26, and 28-44 under 35 U.S.C. § 102(e) as being anticipated by Sakai for at least the reason that Sakai fails to disclose every element of the claimed invention. For example, as mentioned above, independent claim 1 recites, “wherein the separate actuator is a latching solenoid including a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid coil, the separate actuator being configured such that the armature and the core remain at a second position when a first current is removed.” As discussed during the interview, Sakai fails to disclose a “latching solenoid.” The solenoid of Sakai is configured such that the

armature and core return to an upward position once a current is removed from the coil 38. (¶¶ 73, 74, Figs. 3, 5).

With respect to independent claim 12, Sakai fails to disclose “operating ... an electromagnetic latching solenoid...wherein operating includes controllably moving a coupled armature and core of the separate actuator between a first position and a second position by applying a first current to a solenoid coil of the separate actuator, and wherein the coupled armature stays in the second position after the first current is removed.”

Sakai also fails to disclose “wherein the electromagnetic actuator is a latching solenoid having a solenoid coil and an armature coupled with a core, the armature and the core being movable together between a first position and a second position relative to the solenoid coil when a current is applied, and wherein the armature and the core remain at the second position after the current is removed,” as recited by independent claim 21; “engaging an electromagnetic latching solenoid...wherein engaging includes controllably moving a coupled armature and core of the electromagnetic actuator between a first position and a second position,” as recited by independent claim 26; “a latching solenoid...and a controller configured to apply a first current to the solenoid coil to move the armature and the core between a first position and a second position, wherein the latching solenoid is configured such that the armature and the core remain at the first position when the controller removes the first current,” as recited by independent claim 29; and “wherein the electromagnetic actuator is a latching solenoid configured to hold the intake valve open until a first current is applied to the electromagnetic actuator,” as recited by independent claim 40.

Because Sakai fails to disclose each and every element, claims 1, 12, 21, 26, 29, and 40 are in condition for allowance. Dependent claims 4-7, 9-11, 14-16, 24, 25, 28, 32-33, 35, 37-39, and 41-44 each depend from one of independent claims 1, 12, 21, 29, and 40, and are allowable at least for their dependence on an allowable claim. Claims 2, 3, 8, 13, 17-20, 30, 31, 34 and 36 are all cancelled, obviating the rejection of those claims. Accordingly, the 35 U.S.C. § 102(e) rejection of claims 1-21, 24-26, and 28-44 should be withdrawn.

Rejections under 35 U.S.C. § 103

Applicants respectfully traverse the rejection of claims 3-11, 13-16, 19, 20, 31-39, and 41-44 under 35 U.S.C. § 103(a) as being unpatentable over Bloms in view of Sturman. No *prima facie* case of obviousness has been established with respect to claims 3-11, 13-16, 19, 20, 31-39, and 41-44 for at least the reason that there is no motivation to combine Bloms and Sturman.

In the purported combination, the Office Action relies on Sturman to allegedly teach that “it is conventional in the art of a valve controller system to utilize a controller with a latching solenoid actuator.” (Office Action page 11). However, Sturman does not disclose a latching solenoid actuator. Sturman does not discuss or otherwise disclose or suggest “a latching solenoid.” For example, Sturman discloses a first solenoid 138 and a second solenoid 140, but does not disclose either a latching solenoid or the function of a latching solenoid. (i.e., Col. 5, lines 10-25). Because there is no disclosure or suggestion of a “latching solenoid,” one of ordinary skill in the art would not have looked to Sturman for “a controller with a latching solenoid actuator,” as asserted in the Office Action.

For at least this reason, no *prima facie* case of obviousness has been established with respect to claims 3-11, 13-16, 19, 20, 31-39, and 41-44. Furthermore, each of claims 4-7, 9-11, 14-16, 32, 33, 35, 37-39, and 41-44 depends from allowable independent claim, and are, therefore, allowable at least for their dependency on an allowable claim. Claims 3, 8, 13, 19, 20, 31, 34, and 36 are cancelled, obviating the rejection of those claims. Accordingly, the Section 103(a) rejection of claims 3-11, 13-16, 19, 20, 31-39, and 41-44 should be withdrawn.

Applicants respectfully traverse the rejection of claims 2-11, 13-16, 18-20, 30-39, and 41-44 under 35 U.S.C. § 103(a) as being unpatentable over Weber in view of Sturman. No *prima facie* case of obviousness has been established with respect to claims 2-11, 13-16, 18-20, 30-39, and 41-44 for at least the reason that there is no motivation to combine Weber and Sturman.

The Office Action relies on Sturman to allegedly teach that “it is conventional in the art of a valve controller system to utilize a controller with a latching solenoid actuator.” (Office Action page 12). Because there is no disclosure or suggestion of a “latching solenoid,” one of ordinary skill in the art would not have looked to Sturman for “a controller with a latching solenoid actuator.”

For at least this reason, no *prima facie* case of obviousness has been established with respect to claims 2-11, 13-16, 18-20, 30-39, and 41-44. Furthermore, each of claims 4-7, 9-11, 14-16, 32, 33, 35, 37-39, and 41-44 depends from an allowable independent claim, and are, therefore, allowable at least for their dependency on an allowable claim. Claims 2, 3, 8, 13, 19, 20, 31, 34, and 36 are cancelled,

obviating the rejection of those claims. Accordingly, the Section 103(a) rejection of claims 2-11, 13-16, 18-20, 30-39, and 41-44 should be withdrawn.

Applicants respectfully request reconsideration of this application and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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By: 

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